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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,679	09/30/2004	Chu-Chi Ting	13838-US-PA	5678

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JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER

TSIDULKO, MARK

ART UNIT	PAPER NUMBER
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2875

NOTIFICATION DATE	DELIVERY MODE
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09/17/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USA@JCIPGROUP.COM.TW

Office Action Summary

Application No.

10/711,679

Applicant(s)

TING, CHU-CHI

Examiner

Mark Tsidulko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5 and 9-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5 and 9-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

The submission of amendment filed on 6/26/2007 is acknowledged. At this point claims 1, 3-5, 10-13 have been amended, claims , 6-8 have been canceled, new claims 14-17 have been added and the remaining claims left unchanged. Thus, claims 1, 3-5, 9-17 are at issue in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **1, 3-5, 14-17** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (US 2002/0070681) in view of Mueller et al. (US 6,417,019), Nagai et al. (US 6,800,996) and Yang et al. (US 6,147,367).

Referring to Claims 1, 3, 4 Shimizu et al. disclose (Fig.1) a white LED device including a first LED die [11] emitting blue color light, a second LED die [12] emitting red color light, an electrode connection structure [14] having pins [14b] and [14c] electrically connected with the electrodes [15] of the dies, a packaging substrate [17] for receiving a first and a second dies and a transparent packaging layer [16] enclosing the dies and the phosphor layer [13].

Shimizu et al. disclose the instant claimed invention except for a second transparent layer over first layer, a phosphor layer on a top of the die and that first electrodes of the dies are

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electrically connected to the first electrode frame, and second electrodes of the dies are electrically connected to the second electrode frame.

Nagai et al. disclose (Fig.4) a LED device having a transparent layer [17] including a light scattering material for diffusing effect and covering first transparent layer [16].

Mueller et al. disclose (Fig.5) disclose a LED device including a die [8] and a phosphor film [34] covering die [8] absorbing a portion of a primary light and emitting secondary light with different wavelength. This structure will allow filling the groove of the packaging substrate [17] of the structure of Shimizu et al. with first transparent material of the structure of Nagai et al.

Yang et al. disclose (Fig.4b) a LED including a first die [406] and a second die [407], wherein first and second dies are connected through first electrode pin [401] and second electrode pin [403]. This structure allows using of two electrode frames ([1] and [2]), instead of three electrode frames ([14a], [14b] and [14c]), as shown by Shimizu et al., therefore reducing price of the semiconductor.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the device of Shimizu et al. having a transparent layer, as taught by Mueller et al., in order to prevent first layer from damage and obtain uniform light distribution, and provide the device of Shimizu et al., having two electrode frames, as taught by Yang et al., in order to reduce the price of the semiconductor.

Referring to Claims 5, 16 Shimizu et al. disclose the instant claimed invention except for a material of first and second layers.

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Nagai et al. disclose (Fig.1) a first layer [5] made of transparent resin. While Nagai et al. do not disclose material of the second layer [6], one having ordinary skill in the art would have recognized, that any desired transparent material, known in the art and used for light-emitting devices, including glass, could be used for the second layer.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the device of Shimizu et al. having second layer, as taught by Nagai et al., made of glass, in order to prevent the inner portion of the LED from physical damage.

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al., Mueller et al., Nagai et al. and Yang et al. as applied to claim 1 above, and further in view of Chang et al. (TW 546854).

Referring to Claim 9 Shimizu et al. Shimizu et al. in view of Mueller et al., Nagai et al. and Yang et al. disclose the instant claimed invention except for a combination of blue die, green die and red phosphor.

Chang et al. disclose a white light-emitting device including a blue die, a green die and a red phosphor in order to obtain realistic colorless light (see Basic-Abstract).

Referring to Claims 10-12 Shimizu et al. and Shimizu et al. in view of Mueller et al., Nagai et al. and Yang et al. disclose the instant claimed invention except for that the red phosphor covers a blue die only, green die only or both, blue and green dies.

Chang et al. disclose a white light-emitting device including a blue die, a green die and a red phosphor, but do not disclose that the phosphor covers only one of a plurality of dies.

It is known in the art, that colored light emitted from the LED is absorbed by the phosphor, but stimulates the phosphor to emit its own color light (red in this case). It is also well known in the art, that combination of blue, red and green colors creates the white light. Therefore, it is understood that any die, blue, green, or both can be covered with the phosphor for the purpose of stimulating the red phosphor to emit red light, in order to obtain the white light after mixing of three colors in order to obtain realistic colorless light (see Basic-Abstract). Using red phosphor for covering only one of two LED dies (blue or green) allows obtaining different hue of white light: greenish-white, if cover blue die, because some quantity of green light is absorbed by the phosphor, and bluish-white, if cover green die, because of absorbing some green light by the phosphor.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the red phosphor of Chang et al., covering the dies of the device of Shimizu et al. with phosphor film of Mueller et al., dies of Yang et al. and layers of Nagai et al., in any alternative combinations, in order to obtain white light for the purpose of improving color rendition.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al., Mueller et al., Nagai et al. and Yang et al. and Chang et al., as applied to claim 9 above, and further in view of Wang et al. (US 2006/0028122).

Shimizu et al. in view of Mueller et al., Nagai et al., Yang et al. and Chang et al. disclose the instant claimed invention except for the composition of the red phosphor.

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Wang et al. disclose the red phosphor selected from the group consisting of CaS:Eu.sup.2+, SrS:Eu.sup.2+ (page 3, [0034]).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the phosphor of Chang et al. for the device of Shimizu et al. with film of Mueller et al., dies of Yang et al. and layers of Nagai et al., having composition, as taught by Wang et al., in order to obtain white color illumination for the purpose of improving color rendition.

Response to Arguments

Applicant's arguments with respect to claim 6/26/2007 have been considered but are moot in view of the new ground(s) of rejection, using US 6,800,996 to Nagai et al. and US 6,417,019 to Mueller et al.

Conclusion


Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

M.T.
September 3, 2007



Sandra O'Shea
Supervisory Patent Examiner
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